Amino acid SEQ ID NO.	Name of protein/gene, accession No.	leu zipper	Nucleic acid SEQ ID NO.	Num-ber of clones	Alternate Symbols & Ailas
1～14	Mus musculus fip-cx	○	23(1), 24(2-1), 25(2-2), 26(2-3), 27(3), 28(4), 29(5), 30(6), 31(7), 32(8), 33(9), 34(10), 35(11), 36(12), 37(13), 38(14)	29	Frame shift (mage-d3, mRNA, AF319977. melanoma antigen, family D, 3-like, AK047777. trophinin, NM_019548. Trol, Maged3, Maged3l magphinin-alpha, mRNA, AF241245. magphinin mRNA AB032477. magphinin-beta2 mRNA, AF288605. magphinin-gamma mRNA, AF288606. trophinin-2 mRNA)
15～19	Mus musculus eukaryotic translation elongation factor 1 delta (guanine nucleotide exchange protein) (Eef1d), mRNA, NM_023240.	○	39(15), 40(16), 41(17), 42(18), 43(19)	5	5730529A16Rik
20～22	Mus musculus schwannomin interacting protein 1 (Schip1), mRNA, NM_013928.	○	44(20), 45(21), 46(22)	3	Nf2ip, SCHIP-1
47～56	Mus musculus fip-cx.1	○	104(47), 105(48), 106(49), 107(50-1), 108(50-2), 109(50-3), 110(50-4), 111(50-5), 112(51-1), 113(51-2), 114(52), 115(53), 116(54), 117(55), 118(56)	15	Frame shift (mage-d3, mRNA, AF319977. melanoma antigen, family D, 3-like, AK047777. trophinin, NM_019548. Trol, Maged3, Maged3l)
57～76	Mus musculus fip-cx.2	○	119(57), 120(58), 121(59), 122(60), 123(61), 124(62-1), 125(62-2), 126(63), 127(64), 128(65), 129(66), 130(67), 131(68), 132(69), 133(70), 134(71), 135(72), 136(73), 137(74-1), 138(74-2), 139(75), 140(76)	31	Frame shift (magphinin-alpha, mRNA, AF241245. magphinin mRNA AB032477. magphinin-beta2 mRNA, AF288605. magphinin-gamma mRNA, AF288606. trophinin-2 mRNA)

Fig. 1A

Amino acid SEQ ID NO.	Name of protein/gene, accession No.	Leu zipper	Nucleic acid SEQ ID NO.	Num-ber of clones	Alternate Symbols & Ailas
77～81	Mus musculus optineurin (Optn), NM_181848	○	141(77), 142(78), 143(79), 144(80), 145(81)	6	NRP, FIP2, HYPL, 4930441O07Rik, TFIIIA-INTP
82～84	Mus musculus similar to small nuclear RNA activating complex, polypeptide 5, 19kDa; small nuclear RNA activating complex, polypeptide 5, XM_284503.1	○	146(82), 147(83), 148(84)	2	Snapc5, 2010103A03Rik
85～86	Mus musculus C130020M04Rik , BC026483	○	149(85), 150(86)	1	MGC31554
87～89	Rattus norvegicus similar to hypothetical protein FLJ32000, XM_342896.1	○	151(87), 152(88), 153(89)	2	
90～91	Mus musculus Ras-like without CAAX 2 (Rit2), NM_009065.2	×	154(90), 155(91)	1	Rit2
92～93	Mus musculus isolate 1 cytochrome b gene, partial , mitocondorial gene, AF540912.1	○	156(92), 157(93)	1	
94～95	Mus musculus apolipoprotein E, NM_009696.2	×	158(94), 159(95)	1	Apoe
96～97	Mus musculus amyloid beta (A4) precursor protein, BC005490.1	×	160(96), 161(97)	1	Adap, Cvap, Abeta, appican, betaAPP, protease nexin II
98～99	Mus musculus DnaJ homolog, subfamily A, member 2, BC003420	×	162(98), 163(99)	1	Hsp40 homolog, subfamily A, member 2, DNAJ, DNJ3, mDj3, Dnaj3, HIRIP4, PRO3015, DNA J protein
100～101	MUs musculus fip-c10, XM_136911	×	164(100), 165(101)	1	Mus musculus similar to KIAA1209 protein
102	Mus musculus fip-c4	×	166(102)	1	Genome (Mouse DNA sequence from clone RP23-185C16 on chromosome 4)
103	Mus musculus fip-c18	×	167(103)	1	Genome (Mus musculus chromosome 18, clone RP24-572G3, AC102422.10)

Fig. 1B

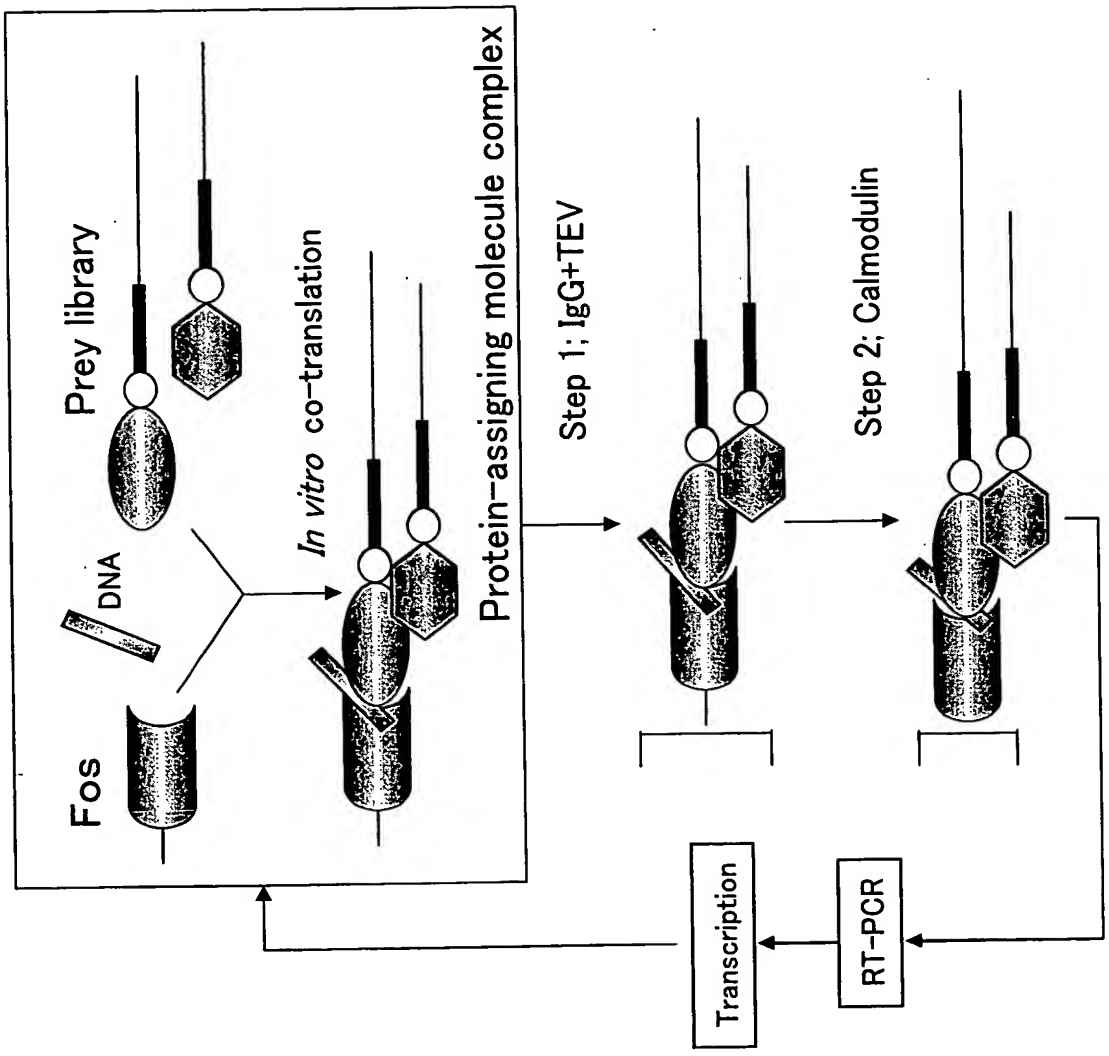

Fos
DNA
Prey library
In vitro co-translation
Protein-assigning molecule complex
Step 1; IgG+TEV
Step 2; Calmodulin
Transcription
RT-PCR

Fig. 2

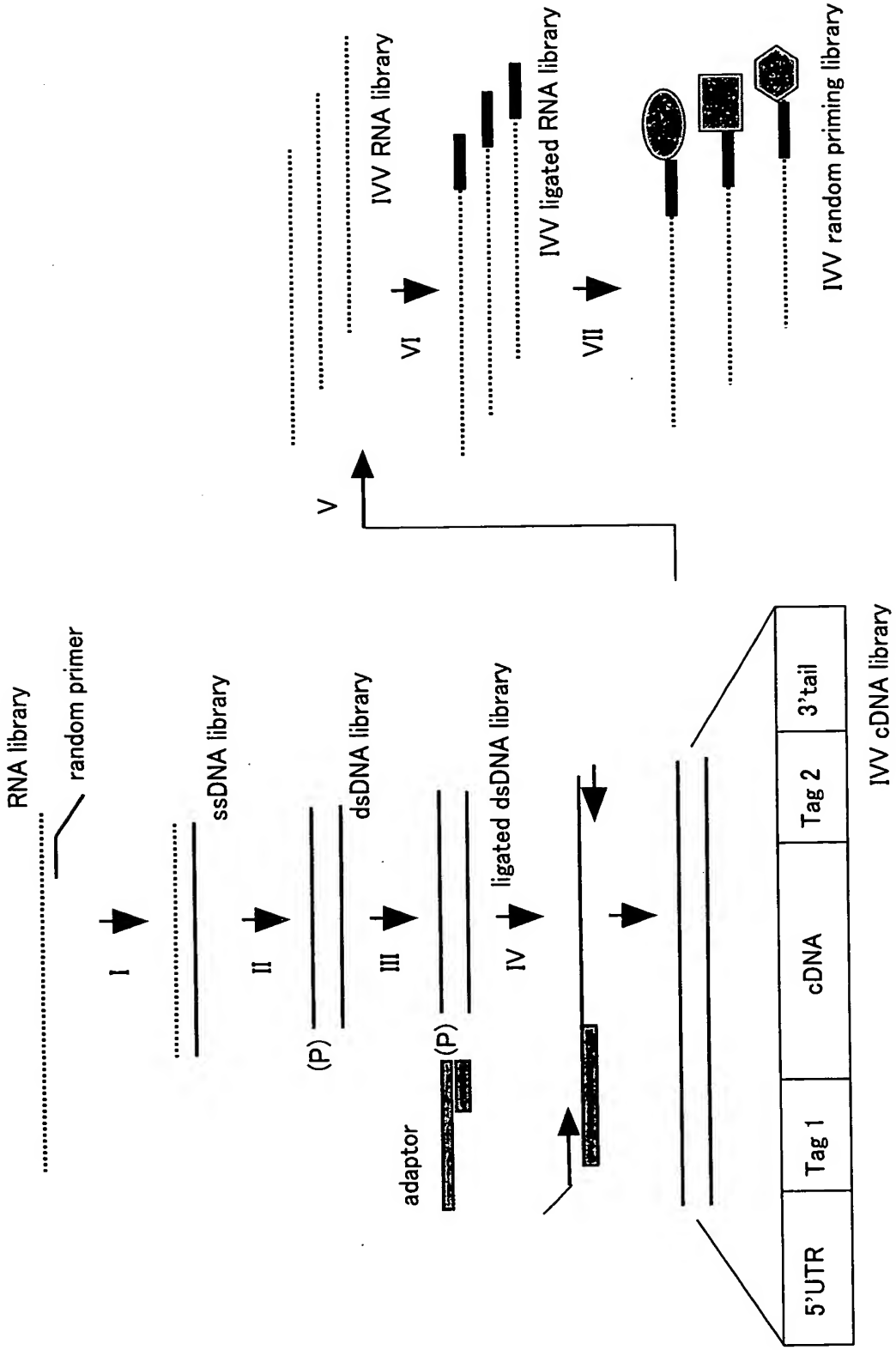
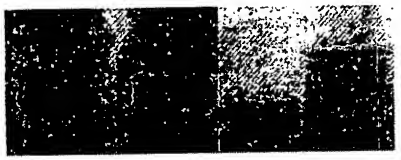
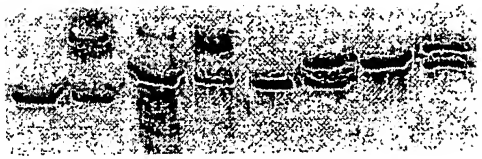

RNA library
random primer
I
ssDNA library
II
(P)
dsDNA library
III
adaptor
(P)
ligated dsDNA library
IV
V
IVV RNA library
VI
IVV ligated RNA library
VII
IVV random priming library
5'UTR
Tag 1
cDNA
Tag 2
3'tail
IVV cDNA library

Fig. 3

A



B



C

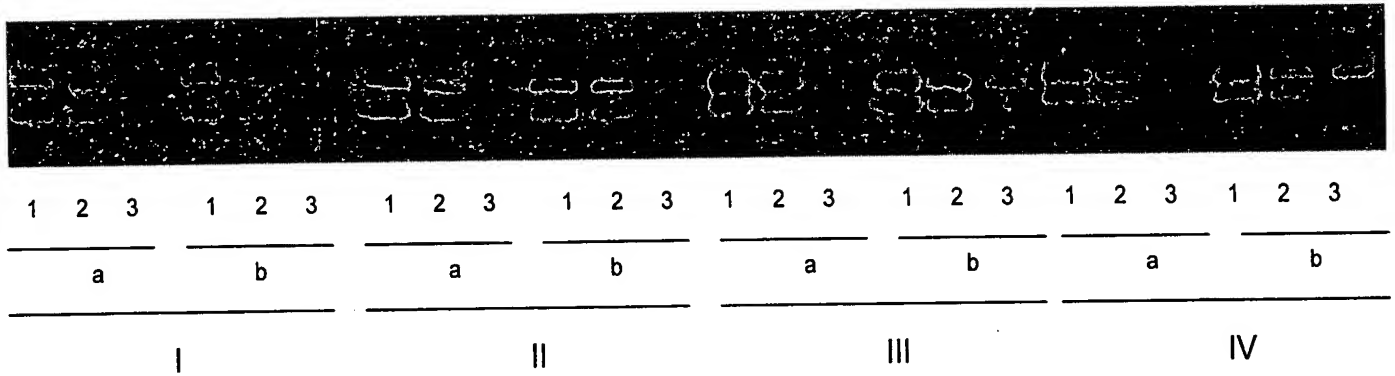


Fig. 4

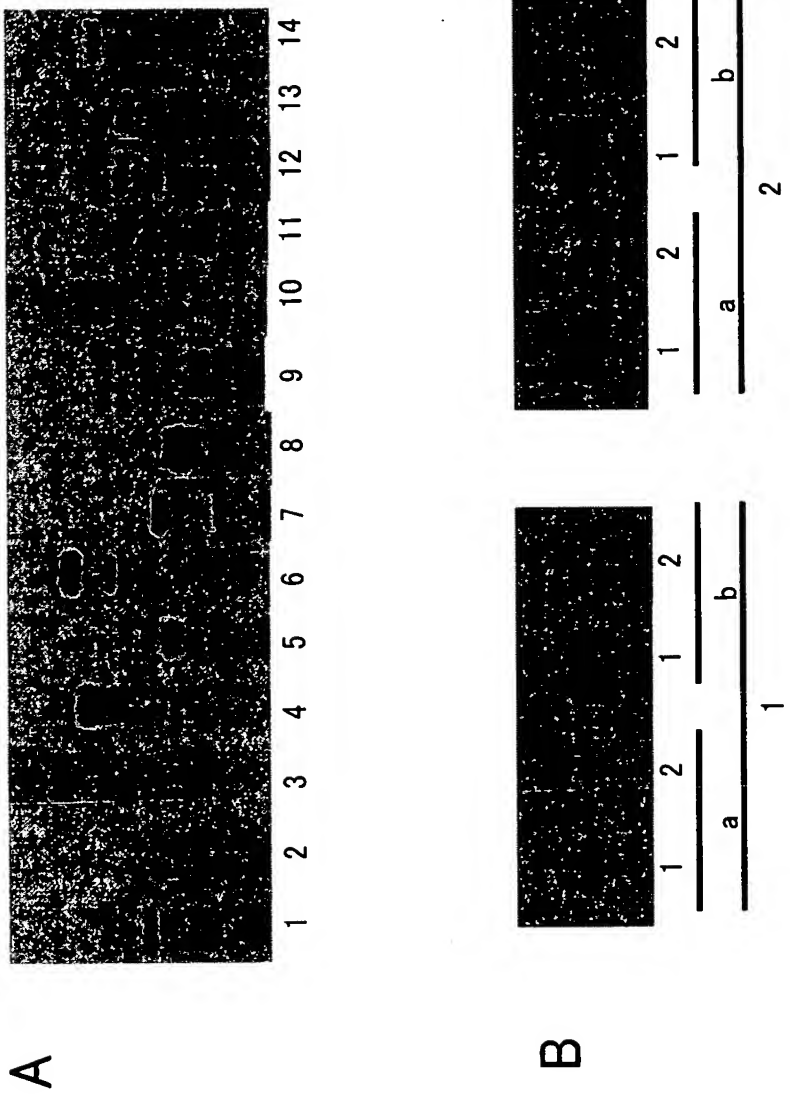
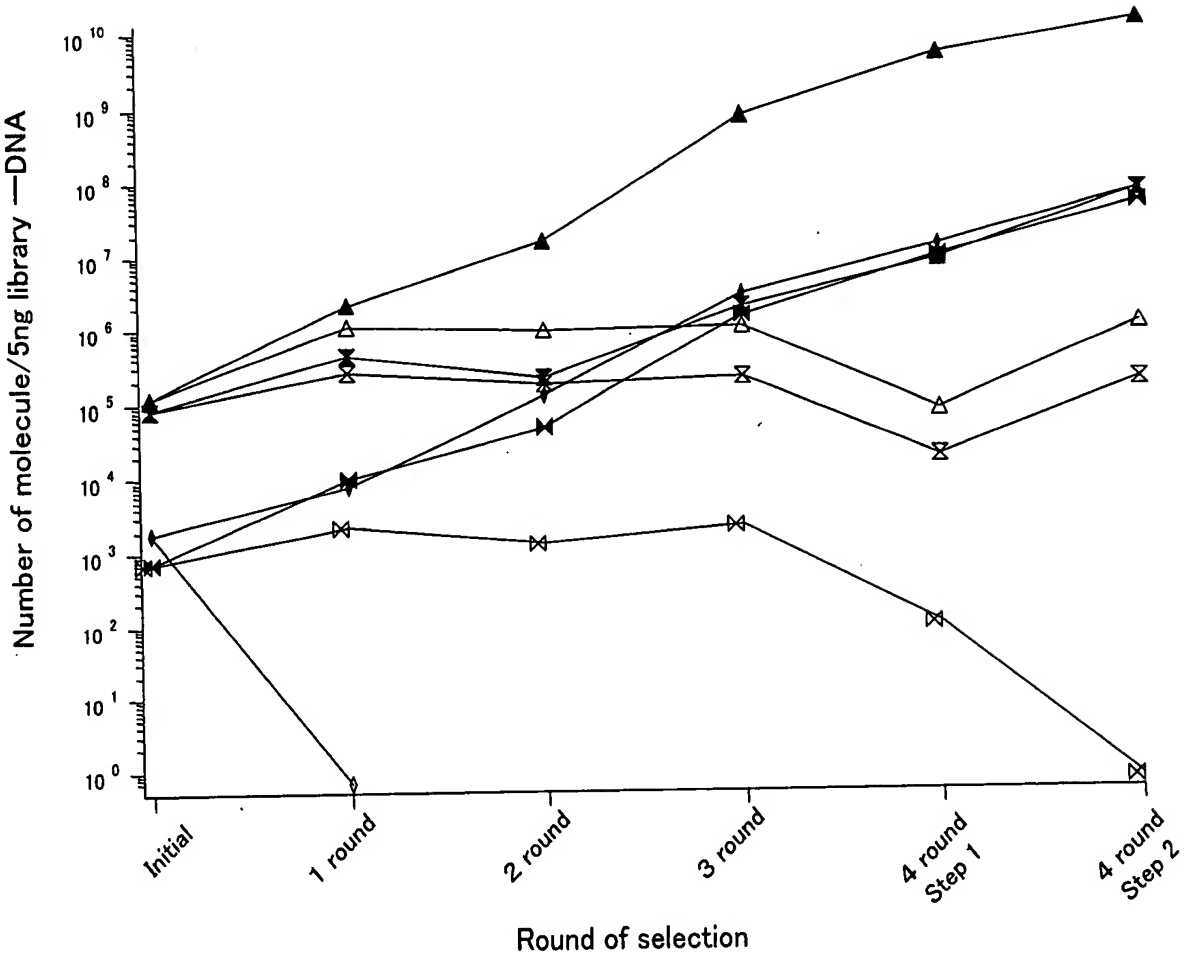


Fig. 5



Gene name	Library	Mock library
optineurin	▲	△
C130020M04Rik	⧫	◊
Rattus simillar to FLJ32000	⋈	⋈
snapc5	⧗	⧖

Fig. 6

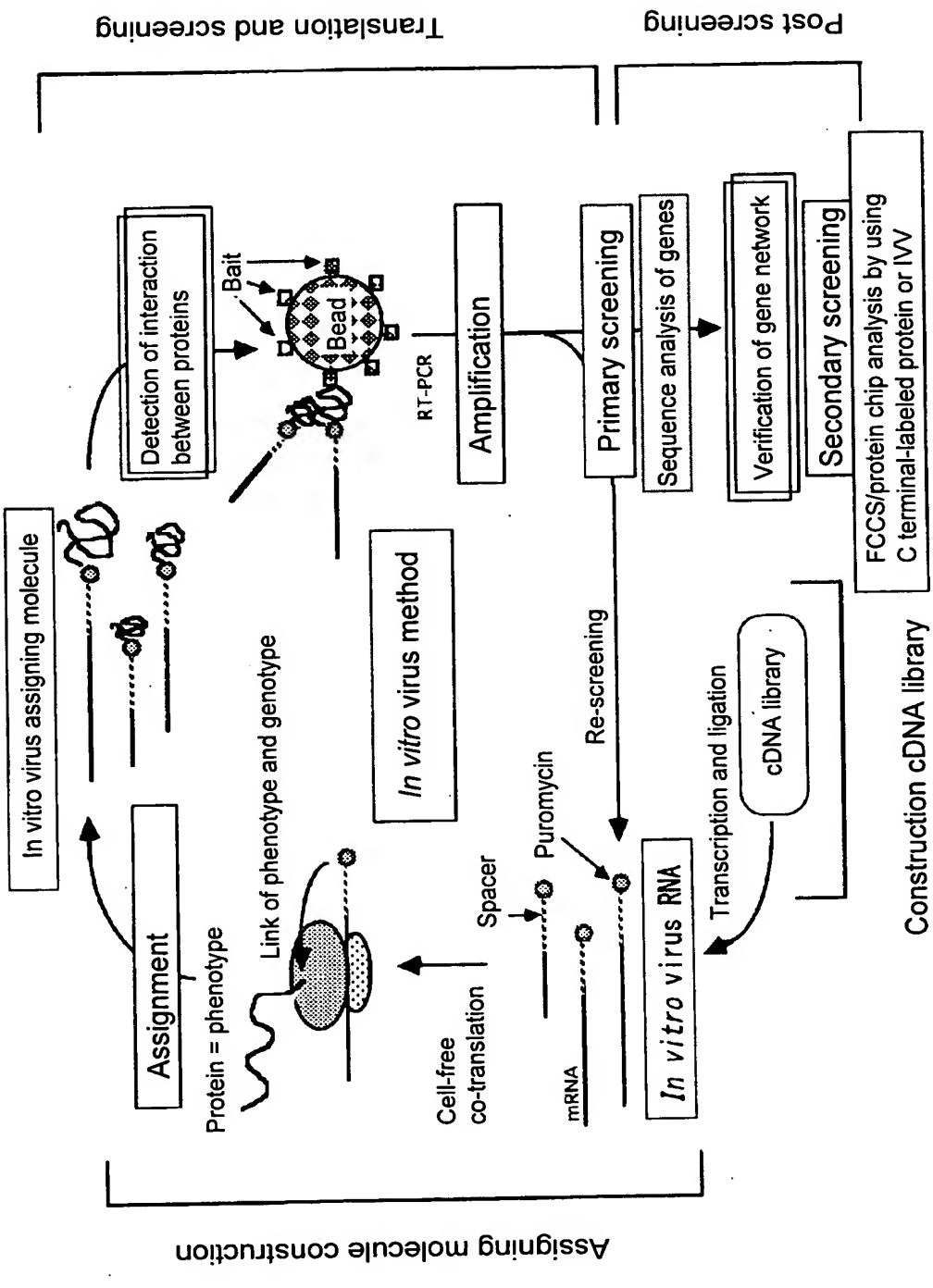
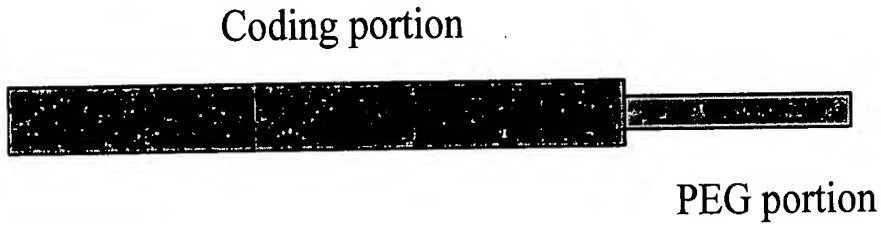

Assigning molecule construction
Translation and screening
Post screening
In vitro virus assigning molecule
Assignment
Protein = phenotype
Link of phenotype and genotype
Cell-free co-translation
Spacer
Puromycin
mRNA
In vitro virus method
In vitro virus RNA
Re-screening
Transcription and ligation
cDNA library
Construction cDNA library
Detection of interaction between proteins
Bait
Bead
RT-PCR
Amplification
Primary screening
Sequence analysis of genes
Verification of gene network
Secondary screening
FCCS/protein chip analysis by using C terminal-labeled protein or IVV

Fig. 7

A Translation template



B Coding portion

C PEG portion

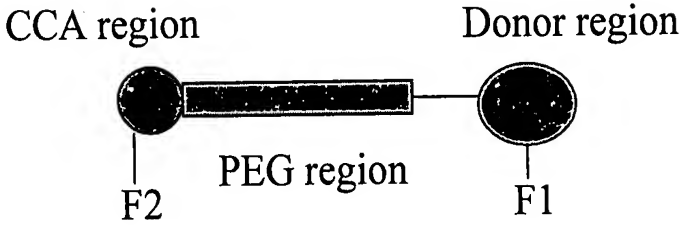
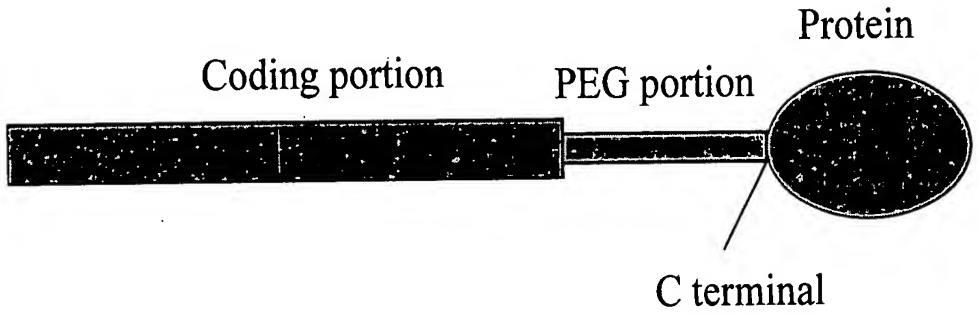
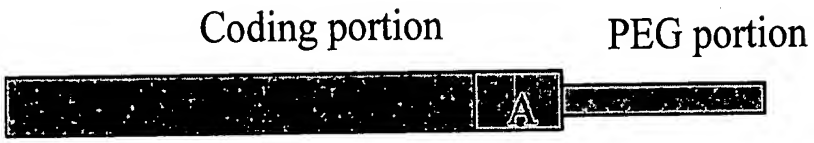


Fig. 8

A Protein of which C terminal is modified with translation template



B Translation template



C Protein of which C terminal is modified with PEG portion

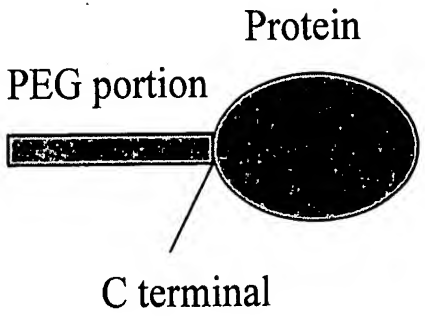


Fig. 9

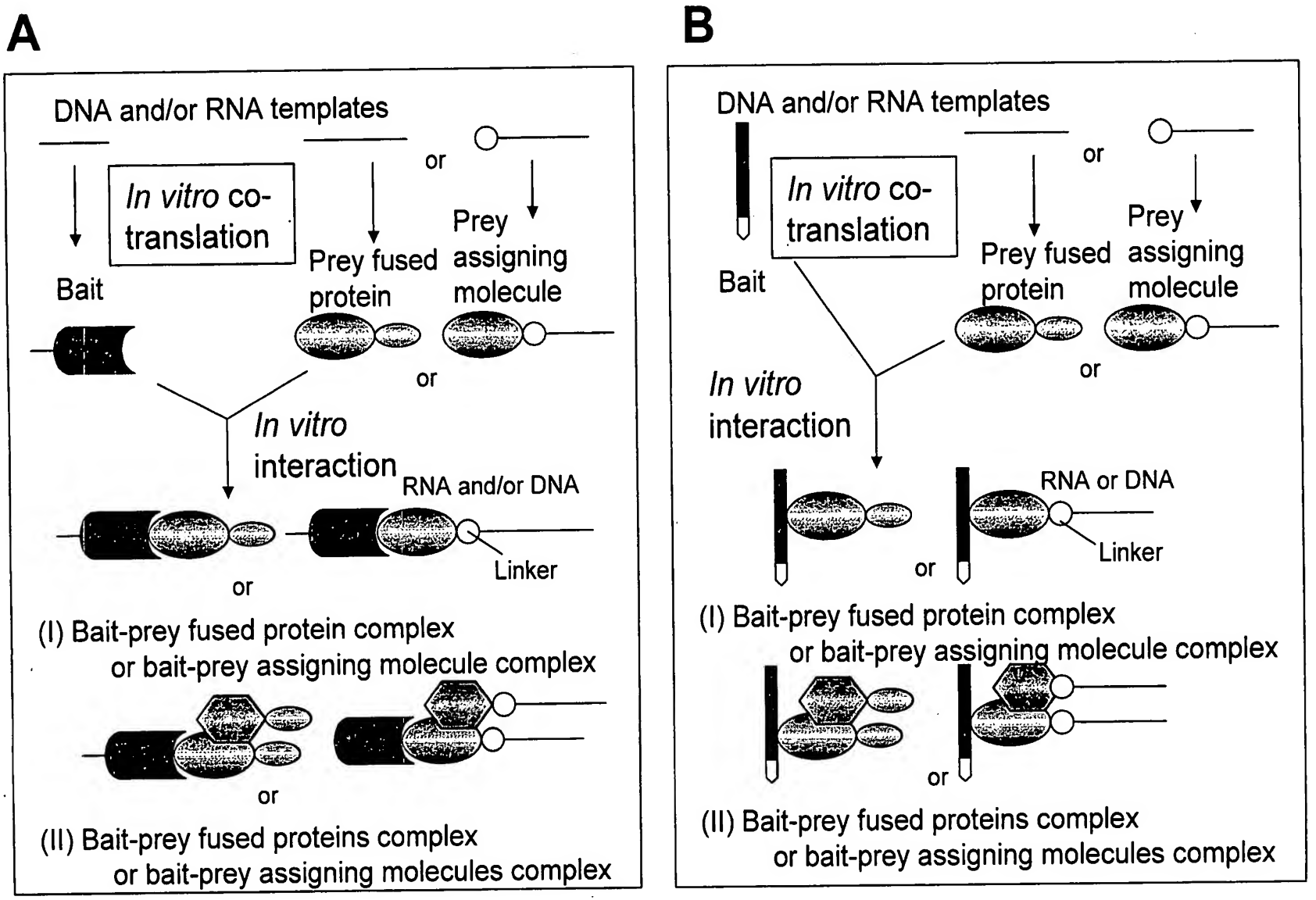

A
DNA and/or RNA templates
In vitro co-translation
Bait
Prey fused protein
or
Prey assigning molecule
or
In vitro interaction
RNA and/or DNA
Linker
or
(I) Bait-prey fused protein complex
or bait-prey assigning molecule complex
or
(II) Bait-prey fused proteins complex
or bait-prey assigning molecules complex
B
DNA and/or RNA templates
In vitro co-translation
Bait
Prey fused protein
or
Prey assigning molecule
or
In vitro interaction
RNA or DNA
Linker
or
(I) Bait-prey fused protein complex
or bait-prey assigning molecule complex
or
(II) Bait-prey fused proteins complex
or bait-prey assigning molecules complex

Fig. 10

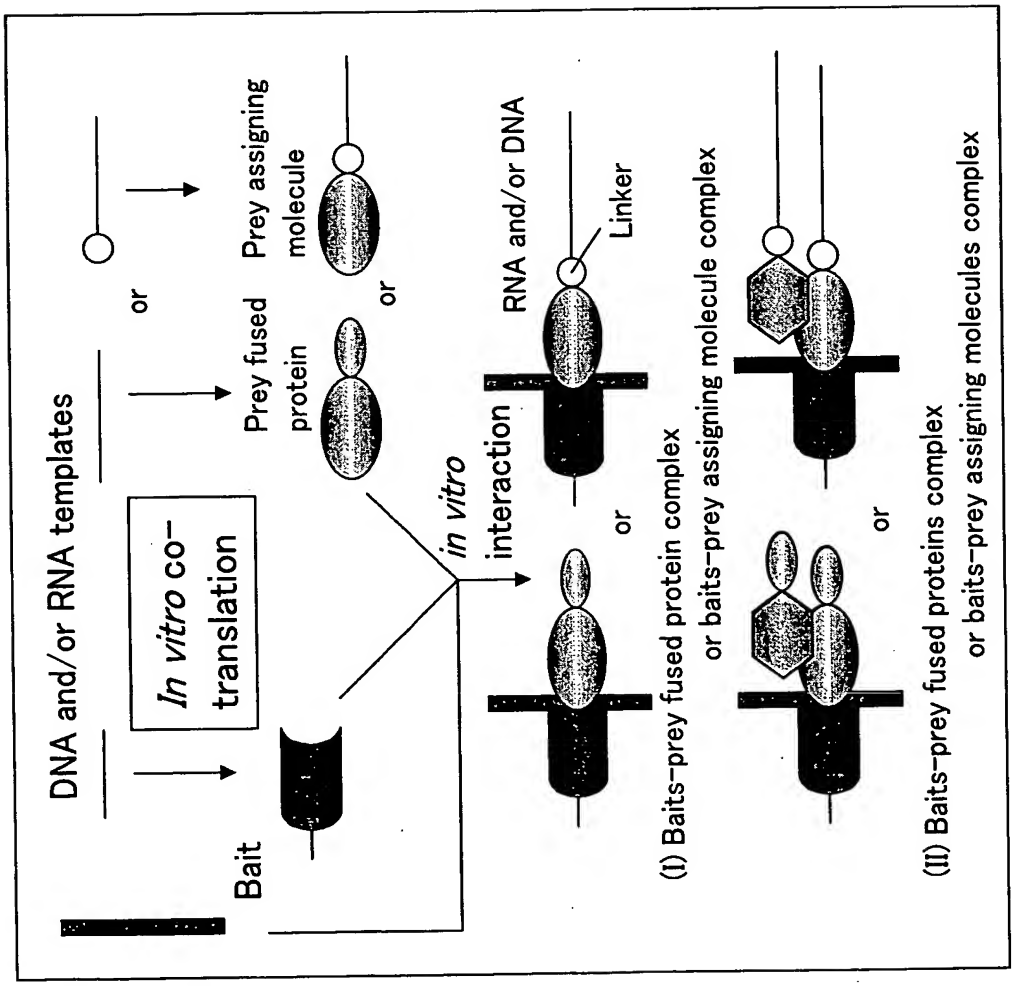

DNA and/or RNA templates
In vitro co-translation
Bait
Prey fused protein
Prey assigning molecule
or
or
in vitro interaction
RNA and/or DNA
Linker
or
(I) Baits-prey fused protein complex
or baits-prey assigning molecule complex
or
(II) Baits-prey fused proteins complex
or baits-prey assigning molecules complex

Fig. 11

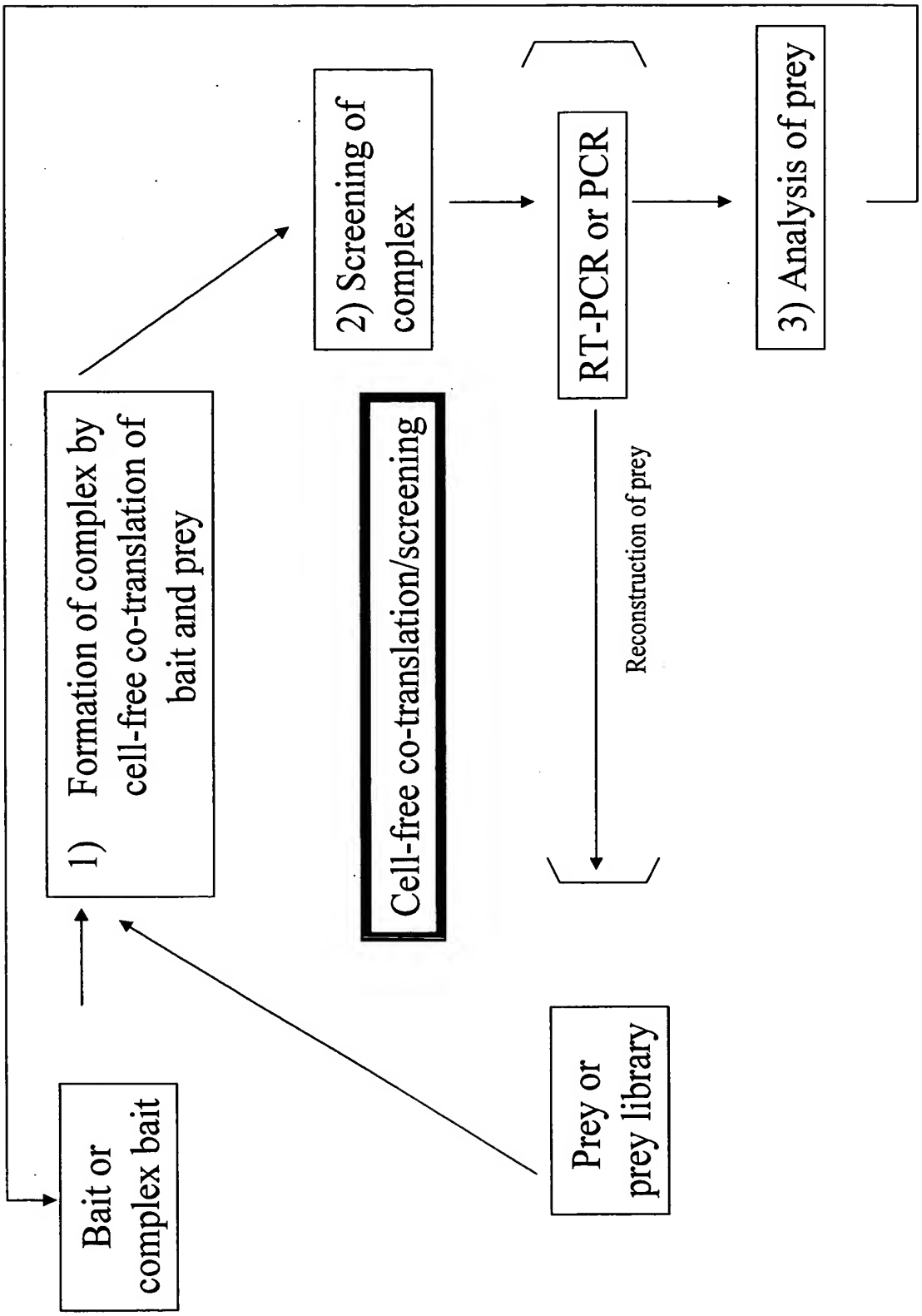

Bait or complex bait
Prey or prey library
1) Formation of complex by cell-free co-translation of bait and prey
Cell-free co-translation/screening
2) Screening of complex
RT-PCR or PCR
Reconstruction of prey
3) Analysis of prey

Fig. 12